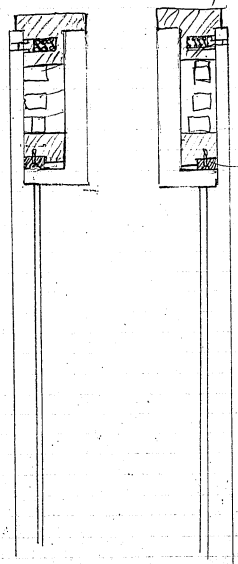
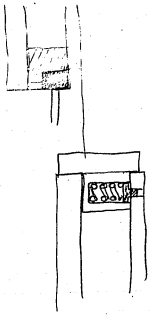
**Notebook, N-08-01-21.2**

This notebook covers the period January-February 1908. All entries are by Edison. The book contains notes and drawings that deal mainly with phonograph cylinder technology. Included are entries regarding the search for a harder cylinder material and for a light but hard reproducer mechanism. At the beginning of the book are drawings relating to unidentified manufacturing equipment and a one-page entry concerning cement house technology. Inserted into the book are two lists by Edison that appear to be related to phonograph cylinder experiments. The front cover is labeled "Notes [N]ew Moulded Records Rep[ro]d[u]c[e]r balls 1908." The pages are unnumbered. Approximately 30 pages have been used.

Jany 21 1908



Jany 21 1908
7 PM

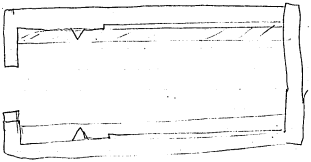


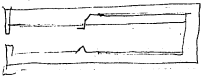
July 21 1908

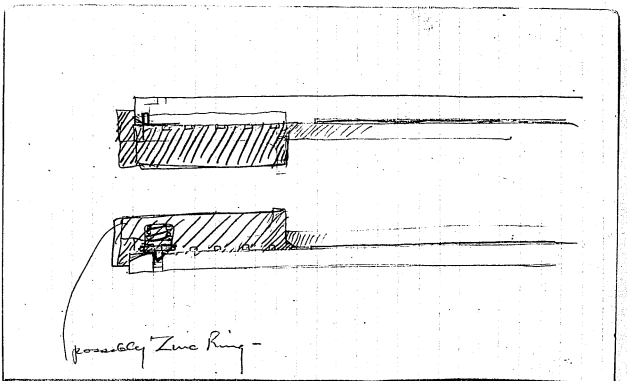
Ringer for pkg —

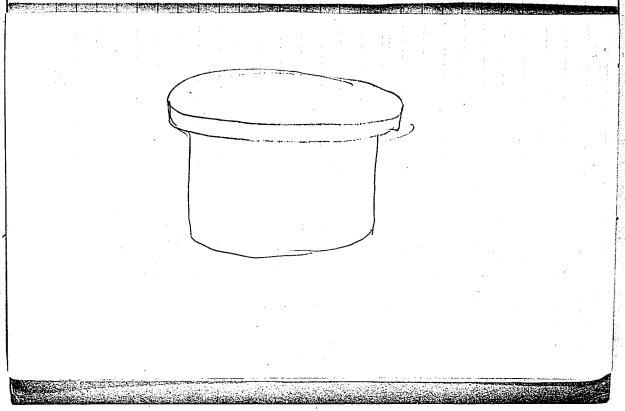
1st Asbestos
2 dead
3 Leather -
4 Paper - paper soaked glycerine -
5 Felt
6 Wool cloth -
7 Celluloid —
8 Heavy Vulcanized rubber draft
9 Hard Rubber -
10 Sacks

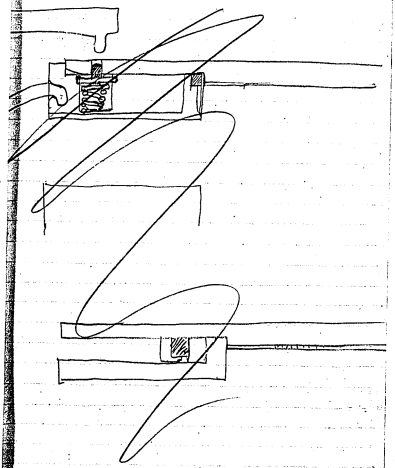
Testing these Sub Galvanized wire in Montana at 150 Fahr to see if attacked —

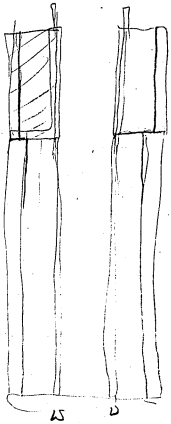


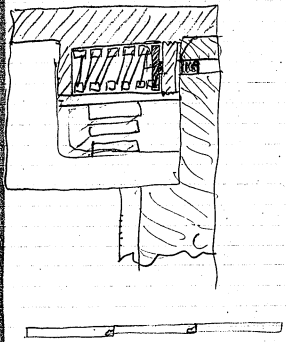



possibly Zinc Ring -







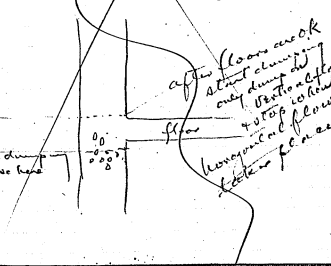



Three moulds at once

Jany 22 1908

New Orleans —

When pouring house with the very liquid Concrete 1 3-4-5 of 1/4 crush rock — Have a lot of 1/2 + 3/4 rock stuff on top of house & dump it Evenly on top of liquid Cement all around the house Then it cannot settle so as to choke the flow



If cloth is put over cylinder of new moulding machine spread the seam.

Jany 31 1908

have tried hot liquids to
toughen the 200 thread record
& perhaps can get it hard
enough for 300 or 400
thread if can get down
the wet on Rapidar

Neo Wax – dipped in Shellac
in Ethyl – dried 1/2 hour
air then put on mandril
loose over hot plate
turned it several times
till uncovered surface
showed loss of gloss

Jany 31 1909

Then took it off mandrel
after it had cooled
somewhat so found
Shellac film perfectly
worked to wax so with
heavy wt Regular didnt
come off Whereas without
the working it chips off
in flakes the shellac dont
stick to wax so it
wont stick even with
Bengal in the shellac
which tends to dissolve
the wax — nothing
short of an actual wash
will dissolve —
Tried Shellac dissolved

Jan 31 1909

Glacial acetic acid. I think this is tougher than an alcohol alone more flexible —

also mixed Kinalo film dope & shellac. This is of course tough but seems to give crackles —

Film stock dissolved in Sol they use at Edison Mfg Co for perfecting film was used, this has to be worked & then its good but very much more

Jany 31 1908

Crackling than celluloid
another feature is that
when welded & cold
its very electrical if
you wipe it with Cotton
it electrifies & fibres
& motes are attracted —
possibly can cure this
by adding Camphor
or some Salicylic acid
which gives off vapor at
ordinary temp —
or perhaps some morpeine
palm amyl acetate —
one way to weld the film
to record is by putting

Jany 31 1908

Record on reg mandril & then putting it 6" above hot plate rotating it now & then - Can tell when wax is at welding point as it loses its luster —

Another way which is quicker & probably well as the Comal way at least for Kinetofilm clock is to dip the Records let it dry thoroughly & then immerse in hot water for 10 seconds the heat of water being just right to melt wax to welding point — then chill the Record & sponge off surface & dry

I have dipped 4 moulds with shellac & shellac for Walsh to try Monday both in reg moulding dip process & spinning process —

If this dont prove crackling the film can be made as thick as we want — in

Jany 31 1904

dipping a record there is a limit to the thickness, the thicker it is the lower the volume of sound - but I find that with film dope of the right to that it is plenty tough enough when so thin that no difference in the volume can be detected

I find that water at 150 10 seconds will soften the record so film will cord to wax —

Its hard to say how long it will take to do it in air probably an at 200 for X minutes will do it = will make a machine to rotate it in the air of a closed chamber

May 31 1908

Making some Cupric ammonium
to dissolve Cellulose in it
& will get some Cellulose
Triacetate from General Electric
to try that —
Don't think Silhouette Soda (1 lb)
water glass is good —
binds affected $H_2O$ + Cut
Saphire —
Will try Chromalyzed Gelatin
+ light — Low Otto making
Oomic —

Jany 31 1909

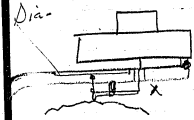
Will try Copal, Mastic, & other hard gums with & without Shellac or film dope

Some of the asphalts are very hard will try them on dipping Record - only as think too much gas given off of ~~[illegible]~~ put on mould perhaps if on spinning cause gas of decomposition blown away from face

Jany 31 1908

New Reader

Dia-

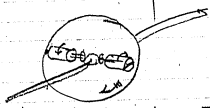



Dia on weight connected to end of lever X & put under strain

Thus showing follow record better / Walke will make

Feby 2 1908

Possibly after a record is dipped in film dope it will have to be put on a machine + rotated in two directions to distribute the film material Evenly



Cylinders turn slowly + at same time turn on their centers I hold this machine made once for distributing Japan Varnish Evenly over a plate surface — when film is dry the records can be taken off which is less than 15 mins

Jany 6 1908

70 72 30 Chrom crystalized as bought.
Sawed them with diamond dust
full checks due to crystals —

Remelted some in Electric F.
& threw in Water — made it very
Crystalline Leaflets — not for
our purposes —

Iron Molybdenum — same very
hard — had some checks that
makes it worthless for balls
Remelted in Electric furnace
& poured in $H_2O$ —

Feby 6 1908

Took some 90 to 20 Borax which had fine pale violet Crystals Embedded in the mass I dissolved the whole in $HCl$ & afterwards $HCl$ & $HNO_3$ & found that everything dissolved but these Crystals I think there is ~~[illegible]~~ enough large pieces to make 8 @ 10/1000 balls for Mass Record

1 = ~~24~~ 50 Hermann Silver small plates take place of the brass ones.

2 = Hoffman - gallon Reg Var reg 6/4 nothing else - 4 gal 15% less than Reg 6/4 - same number of Resin -

3 = treat method Phenol resin with oxalic acid to turn the free phenol into thymol or Rosolic acid & then make Varnish.

4 = 26.6
1.333 trichlphenol
.666 + 50 mlg $ZnCl_2$

26.6
5 1.333 trichlp.
.666 Nitrain + 250 Mlg $FeCl_3$ cpk -

6 ditto 250 mlg Hydrosulphite
7 " 250 glacial acetic acid
8 500 Mlg $FeCl_3$
9 250 " $SbCl$ butter antimony
10 - 250 " Oxide Copper -

Moore 50 plate 30 cc Varnish -
2 " 50 " 60 cc "
13 " 50 Transfer wipe before printing with Castor oil damp rag 1st print wet & wipe with wet print & squeeze out to the limits or the labels only - 50, Carbon only around Edges,
14 50 Transfer plates wiped with Lanolin rag before flowing - only Lanolin

also double wiped Castor oil and Lanolin

[ITEM FOUND IN BOOK]

15 = Hoffman – Print Varnish Reg 6/4
nothing else, Absolute Ethyl nothing
Else, do it in 6 alle

16 = Dunwoddie, Make 8 more Matte
plates 1½ mm – Thermake 12,

17 – 26:6 1.333 666 + 250 Milg Picric acid

18 = 26:6 – 1.333 phenol 666 DEHaen
19 " 2.666 " "
20 4000 – " "

21 26:6 1.333 Cresol Screen 666 DEH
22 " 2.666, " "
23 " 4.000 " "

24 Hs rags – Turkey red oil, Lanolin, Olive oil, Olive acid
Tung or Chinese oil, Linseed,
Opium mound Ethyl –

5 – 26:6 – 1.333 Trichlorphenol, 666 Para
666 – freephenol

do 1.333 – free phenol
do 2.666 "
do 4.000 – "
do 6 000 "
do 10 000, "

7 = Print 12 transfers & wipe the
transfer with oiled rags in 4 places
individually see of hear it in
print,

28 = Lot blanks 231 – 4½ to 1 –

[ITEM FOUND IN BOOK]

29 = 26.6 - 1,333, Trichlorophenol 666 Pnnt
Evaptice very thick like Cooper
dope pound in Cruder + Spread

30 - get some distilled Pentta of
wood - evaporated Crude from Alcohol

31 = one pennt press, plates scrapped
to flat, make second from this
press,

32 = Dally in a vac for 3 or 4 min while wet
want most the alcohol go off if so
we could flow a plate put in Vac 4 min
then (ate out + put in racks - this gets
bubbles out, also - plys save most of
from going in room

33 = Try a cylinder around dried
plates 4" high keep drafts

34 = Moore What is effect if we
print red way but metal cooling
plate out hot + flat until cool again

35 = If we flow thicker varnish
why not tilt the flow table
more,

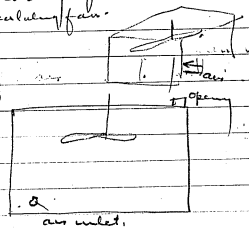
36 = Has new Denatured come + Varny
made,

37 = Pick out 48 thick one side thin
on other, test

38 - 48 Repressed blanks -

39 get some paper tubes
when plates flow put on rack + put
tubes around stop drafts

40 = put jet air in Ovens & a vent other end to dry quicker - like Dally with Circulating fan.




41. 26.6 - 1.333 Isoamyl of 333 Dettari.
42 26.6 1.333 Chinewood oil 333 "
43 = 26.6 1.333 Castor oil 666 "

44 = 26.6 - Nothing in but this,
45 26.6 1.333 Rosin acid 666 Dettari
46 = Halpin go down get 2 1010 2 1008
that has been inspected & put on trial.

47 = 26.6 - 1.333 Triethanolamine 666 Dettari
500 only Caustic Lime -

1 = Try condensing Pentacid by 6/4 in al-

2 = Try the little pieces of 26 & 27 that was highly Condensed with KOH see if it attacks highly Condensed Varnish

3 ~~Find some old records or plates without Penta, but of things see how~~

3 Test some of the little discs I saved (after hard condensation) in KOH,

4 grind a transfer with Rouge 1/4 wide for considerable time see what it does -

K. 25 - over Cook every h

[ITEM FOUND IN BOOK]

6 = ground in Record —

7 Try lumps quick lime in Varnish flow hardener acc if good perspective + KOH,

8 Hoffman – Varnish, 4% Penta acid 2 Mercks Para & absolute alcohol Enough for 6 plates & bottle Varnish for mic — print on polaroke 3 times Tonic —

9 = acc if Reg para melt & solidify Crystalline —

~~10 Try~~ on transfer try KOH, then wash 10 quick then strong HCl, —

11 Dry records, anneal at 180 + some 200 deg for Couple hours then cool slowly at least —

12 = Look How about ~~X~~ Vic attachment

13 = test the drum ~~X~~ washer

14 Look at Surfaces Victor records —

15 Has new Demetrad Come

16 = HOOP — Cause of bubbles on wax KOH on transfer is third in Curing in press the hardening make them by the reaction – Possibly slow hardening — ~~Oven not under pressure at 250 @~~ 275 is what's wanted to let gas come out,

17 ~~Reason~~ 200 plates – Reg Varnish with 1½% Anhydrous Ferric Chloride — this brings to rubbery state at low temp & let ammonia get out quicker ✓

18 = Try 6% anhydrous Chloride Cobalt to take care of the ammonia formed — Condensation

[ITEM FOUND IN BOOK]

Antiqua fwe can't get rid of
$NH_4$ + use Paraform or oxymethyl

See if any acid sulphate is
sol in water -

Acid sulphate of ammonia
Sol alcohol

or any acid salt which
combines to make the $NH_3$
non decomposable -

Try Sulphuric acid dissol

Green chromic Sulphate
dis readily in al-
form doubles with $NH_3$

Anhydrous Cobalous Sulfate
absorbs dry $NH_3$

ditto Cu

do Ni